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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,064	08/02/2005	Pierre Michel Desmons		4877

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EXAMINER	
GANGLE, BRIAN J	
ART UNIT	**PAPER NUMBER**
1645	

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/529,064	DESMONS ET AL.	
	Examiner	Art Unit	
	Brian J. Gangle	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) *11-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I in the response filed 3/13/2006 is acknowledged. The traversal is on the ground(s) that 1) the groups are distinct, but not independent because they arose from the same research effort; 2) Rouppe van der Voort *et al.* (cited in the restriction requirement) does not anticipate the inventive concept of the instant application; 3) it is unreasonable for blebs deficient in PorA to be in separate groups because the invention involves blebs from both homologous and heterologous strains. Upon reconsideration, it appears that the invention is drawn to a composition with a PorA deficient preparation (of which CU-385 is one) and a non-PorA deficient preparation (which serosubtypes P1.4, P1.7,16, and P1.16 are). Thus Groups I-IV are rejoined. However, regarding the restriction of the composition and the method, applicant's arguments are not found persuasive for the following reasons:

The determination of "distinctness" or "independence" is not a consideration when determining lack of unity under PCT Rule 13.1 and 13.2. Further, having a common research effort as the source of discovery of inventions does not render those inventions non-independent.

Upon further consideration, Rouppe van der Voort *et al.* does not anticipate the instant invention, however, there is no special technical feature linking the instantly claimed inventions. As set forth below, Berthet *et al.* (PCT Publication WO 01/09350, 2/8/2001) discloses a meningococcal bleb composition comprising a preparation of blebs that are deficient in PorA and a preparation of blebs that are not deficient in PorA.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1-14 are pending. Claims 11-14 have been withdrawn as being drawn to non-elected inventions. Claims 1-10 are currently under examination.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 6-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 2, the term "prevalent" in claim 2 is a relative term which renders the claim indefinite. The term "prevalent" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear what proportion of individuals in a population must be infected with a particular serosubtype for that serosubtype to be "prevalent."

Regarding claim 6, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 6 recites the broad recitation neisserial, and the claim also recites meningococcal which is the narrower statement of the range/limitation.

Claim 7 is rendered vague and indefinite by the phrase "capsular polysaccharides selected from the following list of serotypes: A, C, Y and W." As exemplified by the art and the specification, there are no "serotypes" A, C, Y and W. The term "serogroup" is used to refer to

classification of *Neisseria meningitides* based on variations in the capsular polysaccharide. The term "serotype" refers to classification of *Neisseria meningitides* based on variations in the outer membrane protein Porin B (see Granoff *et al.*, WO 02/09643, page 17, lines 1-8). Additionally, the term "serogroup" is used in the specification of the instant application rather than the term "serotype" when referring to capsular polysaccharide antigens (see page 1, line 25).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Berthet *et al.* (PCT Publication WO 01/09350, 2/8/2001).

The instant claims are drawn to a multivalent meningococcal bleb composition comprising a bleb preparation deficient in PorA in that it has less than 80% of the amount of PorA as compared to the same quantity of blebs made from strain H44/76 and a bleb preparation that is not deficient in PorA compared to blebs made from strain H44/76 (claim 1). Further limitations found in dependent claims include the composition of claim 1 wherein the bleb preparation that is not deficient in PorA is derived from a meningococcal strain with a serosubtype that is prevalent in a country of use (claim 2); wherein the bleb preparation deficient in PorA has less than 22% PorA of total bleb protein, or lacks PorA (claim 3); wherein the bleb preparation not deficient in PorA has more than 28% PorA of total bleb protein (claim 4); and wherein the bleb preparation deficient in PorA is derived from the meningococcal CU-385 strain (claim 5). The instant claims further include a vaccine for the treatment of neisserial, preferably meningococcal, disease comprising the multivalent meningococcal bleb composition of claim 1 and a pharmaceutically acceptable excipient (claim 6). Further limitations found in dependent claims include the vaccine of claim 6 additionally comprising one or more plain or conjugated meningococcal capsular polysaccharides selected from the following list of serotypes: A, C, Y and W (claim 7); wherein the bleb preparation that is not deficient in PorA is derived from a meningococcal strain with a serosubtype of P1.4 (claim 8); and wherein the bleb preparation that is not deficient in PorA is derived from a meningococcal strain with a serosubtype of P1 .7,16 (claim 9).

Berthet *et al.* disclose a multivalent vaccine comprising mixtures of meningococcus bleb preparations as well as a pharmaceutically acceptable excipient (see page 36, lines 5-28 and page 33, lines 1-5). Said vaccine comprises mixtures of bleb preparations from 2 or more strains, including serotypes P1.15, P1.7,16, and P1.4 (see page 36, lines 15-19). Said vaccine is also disclosed as comprising any or all of the capsular polysaccharides A, C, Y, or W (see page 36, lines 11-14). It should be noted that applicant discloses, in the instant specification, that P1.15 is the serosubtype of strain CU-385, which has 20% PorA (see page 22, lines 19-22 and page 24, lines 8-11) and that P1.7,16 is the serosubtype of strain H44/76, which has 30% PorA (see page 6, line 18 and page 25, table 1). Therefore, the disclosure of Berthet *et al.* anticipates the instantly claimed invention.

Claims 1-9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Granoff *et al.* (PCT Publication WO 02/09643, 2/7/2002).

The instant claims are drawn to a multivalent meningococcal bleb composition comprising a bleb preparation deficient in PorA in that it has less than 80% of the amount of PorA as compared to the same quantity of blebs made from strain H44/76 and a bleb preparation that is not deficient in PorA compared to blebs made from strain H44/76 (claim 1). Further limitations found in dependent claims include the composition of claim 1 wherein the bleb preparation that is not deficient in PorA is derived from a meningococcal strain with a serosubtype that is prevalent in a country of use (claim 2); wherein the bleb preparation deficient in PorA has less than 22% PorA of total bleb protein, or lacks PorA (claim 3); wherein the bleb preparation not deficient in PorA has more than 28% PorA of total bleb protein (claim 4); and wherein the bleb preparation deficient in PorA is derived from the meningococcal CU-385 strain (claim 5). The instant claims further include a vaccine for the treatment of neisserial, preferably meningococcal, disease comprising the multivalent meningococcal bleb composition of claim 1 and a pharmaceutically acceptable excipient (claim 6). Further limitations found in dependent claims include the vaccine of claim 6 additionally comprising one or more plain or conjugated meningococcal capsular polysaccharides selected from the following list of serotypes: A, C, Y and W (claim 7); wherein the bleb preparation that is not deficient in PorA is derived from a meningococcal strain with a serosubtype of P1.4 (claim 8); and wherein the bleb preparation that is not deficient in PorA is derived from a meningococcal strain with a serosubtype of P1 .7,16 (claim 9).

Granoff *et al.* disclose an outer membrane vesicles (bleb) vaccine that comprises a mixture of blebs from genetically diverse strains of *Neisseria meningitidis* as well as a pharmaceutically acceptable excipient (see page 6, lines 23-31 and page 22, lines 5-20). Granoff *et al.* also disclose a bleb vaccine that contains a mixture of blebs from a serogroup C strain as well as a strain with the serogroup P1.4 (see page 7, lines 19-27). Granoff *et al.* further disclose individual bleb vaccines that each comprise strains with the serosubtypes P1.15 (CU-385) and P1.7,16 (see figure 1). Additionally, Granoff *et al.* disclose that the disclosed mixture vaccine has the advantage of broad spectrum protective immunity (see page 15, lines 10-12). It should

be noted that applicant discloses, in the instant specification, that P1.15 is the serosubtype of strain CU-385, which has 20% PorA (see page 22, lines 19-22 and page 24, lines 8-11) and that P1.7,16 is the serosubtype of strain H44/76, which has 30% PorA (see page 6, line 18 and page 25, table 1).

Granoff *et al.* do not explicitly disclose that the bleb vaccine mixture should contain strains with serosubtypes P1.15 (CU-385) and P1.7,16.

However, it would have been *prima facie* obvious to a person of ordinary skill in the art at the time of invention to use the strains with serosubtypes P1.15 (CU-385) and P1.7,16 in the mixture of the bleb vaccine in order to obtain the advantage of broad spectrum protective immunity, as disclosed by Granoff *et al.* Therefore, the use of the serosubtypes P1.15 (CU-385) and P1.7,16 in the mixture of the bleb vaccine is deemed an obvious variation of the disclosed composition.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berthet *et al.* (PCT Publication WO 01/09350, 2/8/2001) in view of Lehmann *et al.* (APMIS 99:769-772, 1991).

The instant claims are drawn to a multivalent meningococcal bleb composition comprising a bleb preparation deficient in PorA in that it has less than 80% of the amount of PorA as compared to the same quantity of blebs made from strain H44/76 and a bleb preparation that is not deficient in PorA compared to blebs made from strain H44/76 (claim 1). Further limitations found in dependent claims include the composition of claim 1 wherein the bleb preparation that is not deficient in PorA is derived from a meningococcal strain with a serosubtype that is prevalent in a country of use (claim 2); wherein the bleb preparation deficient in PorA has less than 22% PorA of total bleb protein, or lacks PorA (claim 3); wherein the bleb preparation not deficient in PorA has more than 28% PorA of total bleb protein (claim 4); and wherein the bleb preparation deficient in PorA is derived from the meningococcal CU-385 strain (claim 5). The instant claims further include a vaccine for the treatment of neisserial, preferably meningococcal, disease comprising the multivalent meningococcal bleb composition of claim 1 and a pharmaceutically acceptable excipient (claim 6). Further limitations found in dependent claims include the vaccine of claim 6 additionally comprising one or more plain or conjugated

meningococcal capsular polysaccharides selected from the following list of serotypes: A, C, Y and W (claim 7); wherein the bleb preparation that is not deficient in PorA is derived from a meningococcal strain with a serosubtype of P1.4 (claim 8); wherein the bleb preparation that is not deficient in PorA is derived from a meningococcal strain with a serosubtype of P1 .7,16 (claim 9); and wherein the bleb preparation that is not deficient in PorA is derived from a meningococcal strain with a serosubtype of P1.16 (claim 10).

Berthet *et al.* disclose a multivalent vaccine comprising mixtures of meningococcus bleb preparations as well as a pharmaceutically acceptable excipient (see page 36, lines 5-28 and page 33, lines 1-5). Said vaccine comprises mixtures of bleb preparations from 2 or more strains, including serotypes P1.15, P1.7,16, and P1.4 (see page 36, lines 15-19). Said vaccine is also disclosed as comprising any or all of the capsular polysaccharides A, C, Y, or W (see page 36, lines 11-14). Applicant discloses in the instant specification that P1.15 is the serosubtype of strain CU-385, which has 20% PorA (see page 22, lines 19-22 and page 24, lines 8-11). Applicant also discloses that P1.7,16 is the serosubtype of strain H44/76, which has 30% PorA (see page 6, line 18 and page 25, table 1).

Berthet *et al.* differs from the instant application in that they do not disclose the use of serosubtype P1.16 in the vaccine composition.

Lehmann *et al.* disclose an outer membrane vesicle (bleb) vaccine comprising blebs from a meningococcal strain with the serosubtype P1.16 (see abstract).

"It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Therefore, it would have been obvious to one of ordinary skill in the art to use blebs from a meningococcal strain with the serosubtype P1.16 in the vaccine composition of Berthet *et al.*

Conclusion

No claim is allowed.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Gangle whose telephone number is 571-272-1181. The examiner can normally be reached on M-F 8:00 am - 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynette Smith can be reached on 571-272-0864.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Brian Gangle
5/4/2006

ROBERT ZEMAN
PATENT EXAMINER